Docket No. **VOCP101US**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re **PATENT** application of:

Applicant:	Donald Paul Archiable
Application No.:	10/685,074
For:	PVLAN
Filing Date:	October 14, 2003
Examiner:	Quochien B. Vuong
Art Unit:	2618

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is filed in the above-referenced matter in response to the Final Office Action of October 5, 2010. The final rejection of claims 1-37 and 40-45 is hereby appealed to the Board of Patent Appeals and Interferences.

This Appeal is presented under 35 U.S.C. § 134(a) and 37 C.F.R. § 41.31(a) in response to the Final Office Action of October 5, 2010, wherein pending claims 1-37 and 40-45 have been finally rejected. A Notice of Appeal was filed on March 7, 2011.

TABLE OF CONTENTS

1. Real Party in Interest 3
2. Related Appeals and Interferences 4
3. Status of Claims 5
4. Status of Amendments 6
5. Summary of Claimed Subject Matter 7
6. Grounds of Rejection to be Reviewed on Appeal 15
7. Argument 19
8. Claims Appendix 27
9. Evidence Appendix.. 35
10. Related Proceedings Appendix..36

1. REAL PARTY IN INTEREST

Vocon, Inc. is the real party in interest.

2. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeals or interferences.

3. STATUS OF CLAIMS

Claims 1-45 are pending in this case. Claims 38-39 have been withdrawn. Claims 1-37 and 40-45 have been finally rejected under 35 U.S.C. § 103(a), and this final rejection forms the basis of the present appeal.

4. STATUS OF AMENDMENTS

No amendments to the claims are pending or have been submitted or entered following the Final Office Action of October 5, 2010.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The subject matter of the present disclosure is directed to the field of wireless communications, and particularly to the generation of a wireless network (*e.g.*, a Bluetooth network or a WiFi network) through which various devices may wirelessly communicate. Many such networks are created through the use of a driven element, such as a powered antenna, that broadcasts an outbound signal, thereby creating a wireless communications field. For example, a wireless network may be generated from an omnidirectional antenna, such that the wireless network radiates in the approximate shape of a sphere away from the antenna. Moreover, the range of the wireless network may be related to the amount of power applied to the driven element. For example, the signal strength of the wireless network at a particular distance from the driven element may be increased by increasing the power applied to the driven element. Similarly, the distance from the wireless network whereby a particular signal strength may be achieved may be extended by increasing the power applied to the driven element. Increased power may be desirable, *e.g.*, to achieve a satisfactory signal strength at a particular distance from the wireless network.

However, as discussed in the present disclosure, it may be desirable to limit the range of the wireless network for various motivations. As a first such motivation, it may be desirable to provide an acceptable signal strength of a wireless network within a particular area where authorized individuals and devices may be present that are desirably included in the wireless network, and to reduce the signal strength of the wireless network to an unsatisfactory or unusable signal strength outside of the desired area, where unauthorized individuals and devices may be present that are desirably excluded from the wireless network. For example, it may be desirable to limit the satisfactory or usable range of the wireless network to include the interior of a building or office while excluding the exterior of the building or office, or to include a particular open-air space (*e.g.*, the proximity of a desktop of an authorized user) while excluding other spaces near the open-air space (*e.g.*, outside the proximity of the desktop). An extended discussion is presented, *e.g.*, in paragraph [0061] of the present disclosure.

As a second example, it may be desirable to limit the range of the wireless network due to concerns about the health impact of exposure to electromagnetic waves. For example, for an individual who spend 2,000 hours per year working in an office environment, it may be desirable to customize the shape and range of the wireless network to provide adequate service to the devices operated by the user within the office environment (*e.g.*, to a desktop computer), while reducing the strength and exposure of the wireless network within the spaces occupied by the user (*e.g.*, the area of an office chair positioned before the desktop computer). An extended discussion is presented, *e.g.*, in paragraphs [0002]-[0003] of the present disclosure.

In accordance with these observations, the present disclosure relates to systems and devices for generating a wireless network with a particular shape that provides adequate signal strength within desired areas of the wireless network, while also reducing the signal strength of the wireless network outside of the desired areas. Accordingly, a wireless network may be generated by a system comprising a driven element that is configured to transmit an outbound information signal that creates a transmission zone that is restrictively ranged proximate to a portion of a surface.

One such wireless network is illustrated in Fig. 2, illustrating a cubicle environment featuring a wireless network 290 that fills only the area of the cubicle near the work surface where computing devices are positioned, but restrictively ranged to reduce the amount of electromagnetic radiation transmitted into the other areas of the cubicle and beyond. In describing Fig. 2, Paragraph [0036] provides (emphasis added):

> The driven element 250 may be configured to transmit an outbound signal at a predetermined power P and a predetermined frequency F that may determine transmission zone attributes like size, shape, and so on. Thus the outbound signal will have a limited range, extending to the edge of the transmission zone, thereby creating a localized functional area for information transmission. The localized functional area may, therefore, cover a work surface with signals for an electronic device on the work surface but not send signals into the body of a person seated near the work surface nor into an adjacent cubicle.

It is notable that this portion of the present disclosure does not only provide for range-restriction of the wireless network as a general principle, but provides two specific and particular details: (1) the wireless network is range-restricted proximate to a particular surface (*e.g.*, "covering a work surface)"; and (2) the range-restriction of the wireless network is achieved through the configuration of the driven element (*e.g.*, by choosing a driven element, such as an antenna, and applying power to the network to generate a wireless network of a desirable size and shape).

Exemplary techniques in the field of wireless broadcasting that may be utilized to achieve this desired shaping are disclosed in paragraph [0021], which provides in relevant portion:

> The driven element 140 may be, for example, an omni directional antenna, a yagi antenna, a horn antenna, a spiral antenna, a helical antenna, a loop antenna, a blade antenna, a sector antenna, and the like.

As further noted in the present disclosure, it may be additionally helpful to further adjust the size and shape of the wireless network through the use of shielding. For example, Fig. 6 illustrates a wireless network (660) that is restrictively ranged within a cubicle, *e.g.*, proximate to the surfaces of the cubicle where a computer may be positioned, and not extending forward (*i.e.*, rightward in the figure) into the seating space of an individual. This range-restriction proximate to these surfaces is achieved through the selected configuration of the powered element. It may be additionally advantageous to include shielding elements that further restrict the size and shape the wireless network (*e.g.*, shielding elements 650 and 655, which are embedded in surfaces of the cubicle to restrict the transmission of the wireless network downward into the legs of the individual, backward [*i.e.*, leftward in the figure] to pass through the back of the cubicle, or upward into and through the cabinet of the cubicle). However, the use of shielding (such as provided, *e.g.*, in claims 2, 20, and 38) is additional to the restrictive ranging of the wireless network through the configuration of and the selected power applied to the driven element.

These specific details of the range-restriction of the wireless network are included as claim limitations in the bodies of independent claims 1, 33, 37, and 45, which are submitted for appeal. For example, claim 1 provides in relevant portion:

> 1. A system configured to create a wireless network near a surface, comprising:…
>
> a driven element configured to transmit an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone that is restrictively ranged proximate to at least a portion of the surface;…

In accordance this summary, the claim elements of independent claims 1, 33, 37, and 45 are mapped to the Specification and Figures in the following manner:

1. A system (p. 3, line 18 – p. 8, line 4; p. 9, line 4 – p. 10, line 31; Fig. 1, 100) configured to create a wireless network near a surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604), comprising:

an information receiving logic (p. 4, lines 11-28; Fig. 1, 120; Fig. 5, 510; Fig. 6, 620) configured to receive an information signal (p. 3, line 24 – p. 4, line 2; Fig. 1, 110);

a driven element (p. 4, line 29 - p. 5, line 15; p. 18, line 28 – p. 19, line 8; Fig. 1, 140; Fig. 6, 635) configured to transmit an outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) at a predetermined power and a predetermined frequency that create a transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) that is restrictively ranged proximate to at least a portion of the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604); and

a transmission line (p. 5, lines 16-27; p. 19, lines 1-8; Fig. 1, 130; Fig. 6, 625) configured to facilitate transferring a first intermediate signal, from which the outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) is derived, from the information receiving logic (p. 4, lines 11-28; Fig. 1, 120; Fig. 5, 510; Fig. 6, 620) to the driven element (p. 4, line 29 - p. 5, line 15; p. 18, line 28 – p. 19, line 8; Fig. 1, 140; Fig. 6, 635).

33. A method (p. 12, line 28 – p. 13, line 24; Fig. 3, 300) of creating a wireless network near a surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604), comprising:

receiving (p, 12, lines 28-29; Fig. 3, 310) an information signal (p. 3, line 24 – p. 4, line 2; Fig. 1, 110);

selectively deriving an intermediate signal from the information signal (p. 3, line 24 – p. 4, line 2; Fig. 1, 110);

selectively relaying (p. 12, line 31 – p. 13, line 2; Fig. 3, 320) the intermediate signal to a driven element (p. 4, line 29 - p. 5, line 15; p. 18, line 28 – p. 19, line 8; Fig. 1, 140; Fig. 6, 635);

transmitting (p. 5, lines 2-11; Fig. 3, 330) an outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) derived from the intermediate signal from the driven element (p. 4, line 29 - p. 5, line 15; p. 18, line 28 – p. 19, line 8; Fig. 1, 140; Fig. 6, 635) at a predetermined power output and a predetermined frequency that create a transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) that is restrictively ranged proximate to at least a portion of the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604); and

positioning one or more shields (p. 5, line 6 – p. 6, line 4; p. 19, lines 10-13; Fig. 1, 195; Fig. 6, 650; Fig. 6, 655) to perform one or more of: molding (p. 5, lines 13-16; Fig. 3, 340) the size of the limited transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660), molding (p. 5, lines 13-16; Fig. 3, 340) the shape of the limited transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660), protecting the limited transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) from RF interference, and limiting interference produced by transmitting the outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150).

37. A piece of furniture, comprising:

an information receiving logic (p. 4, lines 11-28; Fig. 1, 120; Fig. 5, 510; Fig. 6, 620) configured to receive an information signal (p. 3, line 24 – p. 4, line 2; Fig. 1, 110);

a driven element (p. 4, line 29 - p. 5, line 15; p. 18, line 28 – p. 19, line 8; Fig. 1, 140; Fig. 6, 635) configured to transmit an outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) at a predetermined power and a predetermined frequency that create a transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) that is restrictively ranged proximate to at least a portion of the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604);

a transmission line (p. 5, lines 16-27; p. 19, lines 1-8; Fig. 1, 130; Fig. 6, 625) configured to facilitate transferring a first intermediate signal, from which the outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) is derived, from the information receiving logic (p. 4, lines 11-28; Fig. 1, 120; Fig. 5, 510; Fig. 6, 620) to the driven element;

a shield (p. 5, line 6 – p. 6, line 4; p. 19, lines 10-13; Fig. 1, 195; Fig. 6, 650; Fig. 6, 655) configured to perform one or more of: molding the transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660)~~,~~ to at least partially block electromagnetic radiation from entering the transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660), and to at least partially block the outbound signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) from leaving the transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660).

45. A system configured to create a wireless network near a surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604) to an electronic device (p. 19, lines 27-28; Fig. 6, 665) substantially positioned within the transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660), at least a portion of the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604) comprising one or more of a desktop, a tabletop, a desk, a table, a wall, a ceiling, a floor, a door, a window, a kiosk surface, a work surface, an airplane seat, an airplane seat-back, an airplane tray-table, an automobile interior, medical furniture, a medical enclosure, and a cabinet, the system comprising:

an information receiving logic (p. 4, lines 11-28; Fig. 1, 120; Fig. 5, 510; Fig. 6, 620) integrated with the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604) and configured to receive an information signal (p. 3, line 24 – p. 4, line 2; Fig. 1, 110);

at least one driven element (p. 4, line 29 - p. 5, line 15; p. 18, line 28 – p. 19, line 8; Fig. 1, 140; Fig. 6, 635) integrated with the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604) and configured to transmit an outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) at a predetermined power and a predetermined frequency that create a transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) that extending outward from at least a portion of the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604) and that is restrictively ranged proximate to at least a portion of the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604), the predetermined power of the outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) transmitted with a power that is less than about 1/48th of the power of the outbound signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) transmitted from the electronic device (p. 19, lines 27-28; Fig. 6, 665);

a transmission line (p. 5, lines 16-27; p. 19, lines 1-8; Fig. 1, 130; Fig. 6, 625) configured to facilitate transferring a first intermediate signal, from which the outbound information signal (p. 5, line 28 – p. 6, line 8; p. 19, lines 9-10; Fig. 1, 150) is derived, from the information receiving logic (p. 4, lines 11-28; Fig. 1, 120; Fig. 5, 510; Fig. 6,

620) to the driven element (p. 4, line 29 - p. 5, line 15; p. 18, line 28 – p. 19, line 8; Fig. 1, 140; Fig. 6, 635);

at least one frequency non-specific shield (p. 5, line 6 – p. 6, line 4; p. 19, lines 10-13; Fig. 1, 195; Fig. 6, 650; Fig. 6, 655) configured to mold the transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) into a substantially spherical molded transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) that is less than twenty four inches in a plane, that is not coextensive with the environment within which the transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) is located, and that is substantially discontinuous from a space a user's body occupies when operating in an environment within which the molded transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660) is located; and

a plurality of effective zone indicators located on the surface (p. 14, lines 8-17; p. 15, lines 23-28; p. 18, lines 3-10; Fig. 5, 500; Fig. 6, 604) and configured to visually indicate respective boundaries of the molded transmission zone (p. 5, line 32 – p. 6, line 7; Fig. 1, 160; Fig. 6, 660).

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

This appeal to the Board of Patent Appeals and Interferences involves the following grounds for rejection of independent claims 1-37 and 40-45 under 35 U.S.C. § 103(a) as allegedly being obvious in view of U.S. Patent No. 6,571,103 (*hereinafter* "Novakov") and U.S. Patent No. 5,276,277 (*hereinafter* "Hightower").

The present application was filed on October 14, 2003. In the Non-Final Office Action of November 16, 2009, the Examiner rejected claims that were substantially similar to the claims under appeal. This rejection cited 35 U.S.C. § 103(a) as allegedly obvious in view of Novakov and Hightower.

In a Reply to the Non-Final Office Action of November 16, 2009 (the Reply filed on February 12, 2010), the applicant presented claim amendments that particularly focused on the selected configuration of a driven element to generate a wireless network that is range-restricted proximate to a portion of a surface. In this Reply, the applicant set forth arguments equivalent to the arguments presented herein that distinguished Novakov and Hightower, particularly in view of the concurrently presented claim amendments.

However, the Final Office Action of October 5, 2010, the Examiner finally rejected the amended claims under 35 U.S.C. § 103(a) citing Novakov and Hightower. The claims rejected in that Final Office Action are identical to the claims presently under appeal.

With respect to the elements in independent claims 1, 33, 37, and 45 that provide a driven element configured to generate a wireless network that is restrictively ranged proximate to a surface, the Final Office Action cites both Novakov and Hightower. In particular, the Final Office Action provides (page 2):

> Regarding claim 1, Novakov (figure 1) discloses a system configures [sic] to create a wireless network near a surface, comprising… a driven element (10) configured to transmit an outbound signal at a predetermined power and a predetermined frequency that create a transmission zone.
>
> Novakov does not specifically disclose the transmission zone is restrictively ranged proximate to at least a portion of a surface. However, Hightower et al. disclose the transmission zone can be adjusted depending on the desired system (column 12, lines 54-65). Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to adapt the teaching of Hightower et al. for adjusting the transmission zone to a desired office space that is restrictively ranged proximate to at least a portion of the surface as a system design preference to reduce electromagnetic interference, secure communications, and to customize communication between the respective bounded office space.

With respect to the arguments presented in the Reply to the Non-Final Office Action of November 16, 2009, the Final Office Action (pages 12-13) presents the following rebuttal:

> Regarding claims 1, 33, and 37, Applicant argues that Novakov and Hightower do not disclose “transmitting an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone that is restrictively ranged proximate to at least a portion of a surface”. The examiner, however, does not agree with the Applicant. Novakov discloses transmitting an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone (column 3, line 66 – column 4, line 46; and column 5, lines 32-44). And Hightower et al. disclose the transmission range can be adjusted depending on the desired system (column 12, lines 54-65). Therefore the combination of Hightower and Novakov reads on the claimed limitation as in the rejection above.
>
> And further Hightower discloses the electromagnetic transmission can be individually designed to reduce electromagnetic interference, secure communications, and to customize communication between the respective bounded office space (column 12, lines 54-65); therefore it would have been obvious for the transmission zone to be in any short ranges including forty eight, thirty six, or twenty four inches in space.

In summary, the Examiner asserts that the teaching in Novakov that a wireless network may be generated at a particular power level to fill a particular volume of space (*e.g.*, col. 5, lines 39-44: “A higher [power level] value can be selected if wider ranges (e.g., house and garden) are to be covered. A lower [power level] value may be useful for crowded environments (e.g., in large offices) or for secrecy reasons.”), and the teachings of Hightower that a wireless network may be adapted for a particular environment (*e.g.*, col. 12, lines 60-65: “the electromagnetic environment for each office enclosure is individually designed to reduce electromagnetic interference, to secure communications, and to customize electromagnetic signal transmissions and reception within the respective bounded office space”), render obvious the presently asserted claims to a wireless network generating system comprising “a driven element configured to transmit an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone that is restrictively ranged proximate to at least a portion of the surface” as provided in independent claims 1, 33, and 37.

7. ARGUMENT

The Appellant respectfully requests review by the Board of Patent Appeals and Interferences of the grounds for rejection of claims 1-37 and 40-45 under 35 U.S.C. § 103(a) as allegedly being obvious in view of Novakov and Hightower.

7(a). Claim elements are to be given the "broadest reasonable interpretation."

It is well-settled that an evaluation of the scope of a patent claim must interpret every claim limitation according to its "broadest reasonable interpretation" (in view of the specification).

This principle was recently stated in *Ex parte Givens* (Appeal 2009-003414 (BPAI, August 6, 2009)). This matter involved the interpretation of a claim including in relevant part:

> introducing said noise canceller output signal into a sub-band spectral subtractive routine external to said LMS-based adaptive noise canceller, producing a reduced noise signal.

In comparing this claim to a particular reference (referred to as "Lin"), the examiner acknowledged that the specification provided that "sub-band spectral subtraction algorithms are… known to those skilled in the art." However, the examiner asserted that because the applicant had not defined the claim term "sub-band spectral subtractive routine," the "broadest reasonable interpretation" of this claim term was "any adaptive filter." Thus, although the cited reference did not teach the use of a "sub-band spectral subtractive routine," the examiner accorded no limiting weight to this claim element, and thus rejected the claim under 35 U.S.C. § 102(e) in view of the Lin reference.

The Board of Patent Appeals and Interferences disagreed and held thus (emphasis added):

> Although Applicant's Specification does not specifically define the term "sub-band spectral subtractive routine," this is a specific claim term for a specific type of filtering (Spec. ¶[0032]). Any interpretation that fails to give weight to "sub-band," "spectral," "subtractive," and "routine" deprives the words in this claim term of their normal meaning. Thus, the "sub-band spectral subtractive routine" does not include just *any* adaptive filter, but rather refers to a specific filtering technique. … Thus, because Lin does not disclose each and every element of Appellant's invention, Lin does not anticipate claims 1-15.

Thus, the opinion in this case, which was subsequently marked as "informative" by the Board of Patent Appeals and Interferences (defined as an opinion that "may explain best practices, address recurring problems, identify developing areas of the law, exemplify types of decisions under-represented in commercial case reporting services, or report cases of public interest"), recites the long-settled proposition that every element in the body of a claim must be interpreted according to its "broadest reasonable interpretation," and that any interpretation that fails to attribute such weight to a claim element "deprives the words in this claim term of their normal meaning."

It is respectfully submitted, and will be demonstrated herein, that in rejecting the claims under appeal in view of Novakov and Hightower, the examiner has failed to interpret the claim element "restrictively ranged proximate to at least a portion of a surface" according to its broadest reasonable interpretation. Indeed, the examiner has failed to attribute to this claim element any weight at all, and has relied upon a claim interpretation that completely disregards this element in independent claims 1, 33, 37, and 45.

7(b). Novakov does not teach anything about configuring a powered element to restrict the range of a wireless network to the proximity of a particular surface.

U.S. Patent No. 6,571,103 (*hereinafter* "Novakov") teaches that the signal strength of a wireless network may be adjusted in order to alter its range (*e.g.*, the radius of a substantially spherical volume of space). For example, the Final Office Action cites Novakov at col. 5, lines 39-44, which provides in relevant portion:

> "A higher [power level] value can be selected if wider ranges (e.g., house and garden) are to be covered. A lower [power level] value may be useful for crowded environments (e.g., in large offices) or for secrecy reasons."

Such teachings may relate to "a driven element configured to transmit an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone," as provided in independent claims 1, 33, 37, and 45.

However, Novakov fails to teach that the configuration of the driven element is selected to restrict the range of the wireless network proximate to at least a portion of a surface, as provided in each of these independent claims. Rather, the techniques of Novakov simply correlate with a desired volume of space (*e.g.*, a space within a building, or a space comprising a garden). Indeed, there is no "surface" of any kind involved in the techniques of Novakov, nor any teaching of configuring the driven element to generate a wireless network that is restrictively ranged proximate to a surface. Any surfaces that may be present within or near the volume of space to be filled with the wireless network are wholly incidental and essentially irrelevant to the application of the techniques in Novakov.

Thus, it is respectfully submitted that Novakov fails to teach anything about restricting the range of a wireless network proximate to a portion of a surface. Accordingly, the rejection of the examiner "fails to give weight" to these claim elements, and "deprives the words in this claim term of their normal meaning," according to *Ex parte Givens*. Indeed, the claims may only be interpreted in this manner by attributing no meaning or limiting effect whatsoever to this specific element of independent claims 1, 33, 37, and 45.

It is respectfully submitted that this claim element cannot be disregarded in this manner, because the restriction of the range of the wireless network proximate to a portion of a surface is material to the substance of the claim and the uses of the techniques to which the disclosure relates. In the present disclosure, the surface is not merely coincidentally present, as appears to be the case in the scenarios described by Novakov. Rather, the present disclosure provides motivations for limiting the range of the wireless network not generally, but specifically proximate to a surface. For example, [0036] provides:

> The driven element 250 may be configured to transmit an outbound signal at a predetermined power P and a predetermined frequency F that may determine transmission zone attributes like size, shape, and so on. Thus the outbound signal will have a limited range, extending to the edge of the transmission zone, thereby creating a localized functional area for information transmission. The localized functional area may, therefore, cover a work surface with signals for an electronic device on the work surface but not send signals into the body of a person seated near the work surface nor into an adjacent cubicle.

Thus, it is respectfully submitted that because the rejection by the examiner of claims 1, 33, 37, and 45 is based on an interpretation fails to interpret a material claim element according to its “broadest reasonable interpretation,” the examiner has deprived this claim term of its “normal meaning,” or, indeed, any meaning at all.

7(c). Hightower also does not teach anything about configuring a powered element to restrict the range of a wireless network to the proximity of a particular surface.

U.S. Patent No. 5,276,277 (*hereinafter* “Hightower”) relates to materials that may be used to block the transmission of electromagnetic communications, such as a wireless network, through a surface. Such materials may be used as shielding elements that are positioned to block, and therefore shape, the wireless network generated by a driven element. For example, at col. 6, lines 8-29, Hightower teaches (emphasis added):

> Generally described, the present invention provides a system for selective propagation of electromagnetic signals, including the signals of at least one communications system operating within at least one certain frequency range throughout a bounded region. The present invention attenuates electromagnetic signals within each certain frequency range that enter or leave the bounded region, and permits the passage across the boundary of signals in at least one other frequency range outside each certain frequency range of each enclosed communications system. In this manner, a communications system operator within the bounded region can communicate therein without interfering with or interference from another system using the same frequency range and located outside the bounded region. Also, the communications system operator within the bounded region can securely communicate inside the bounded region with an enclosed communications system operating within the certain frequency range and also can communicate outside the bounded region with a communications system operating in the other frequency range.

Hightower more particularly relates to the selection of material that may block electromagnetic transmissions within a blocked frequency range, but may allow transmissions at other frequencies to pass therethrough. The remainder of Hightower generally focuses on the types of materials that may achieve this effect (*e.g.*, different types of filters that may selectively block the desired frequency range).

While Hightower (unlike Novakov) does involve the presence of a surface within the environment of the wireless network, Hightower does not teach the generation of a wireless network that is range-restricted proximate to this surface. The techniques of Hightower are exclusively related to whether or not the wireless network passes through the blocking surface – but does not relate to how far away from the surface the wireless network radiates. Moreover, Hightower teaches nothing about range-restricting the wireless network through the configuration of the powered element. Rather, Hightower relates exclusively to the use of "blocking surfaces" that block the transmission of the wireless network through the surfaces, and that confine the wireless network to the space bounded by the surfaces.

It is respectfully submitted that this teaching of Hightower materially differs from the subject matter provided in the presently asserted claims. This difference is demonstrated in the following examples.

As a first example, the techniques of Hightower cannot workably substitute for the configuration of the powered element to achieve the "range restriction proximate to the surface" provided in the presently claimed subject matter. For example, Fig. 6 of the present application illustrates a workspace within which a range-restricted wireless network may be broadcast without extending into the area occupied by an individual seated at the workstation (*e.g.*, rightward with respect to the space 660). This type of range-restricted wireless network cannot be achieved by substituting the techniques of Hightower, which would involve enclosing the bounds of the wireless network space 660 with blocking surfaces, thereby preventing the user for reaching into the space.

As a second example, while the techniques of Hightower cannot substitute for the range-restriction of the wireless network proximate to a surface through the configuration of the powered element, such techniques may supplement the presently disclosed and claimed techniques to further mold the shape and size of the wireless network, using a different technique and resulting in different effects. For example, in Fig. 6 of the present application, blocking surfaces of the type taught by Hightower may be utilized as elements 650 and 655 to block the transmission of the wireless network through the lower, upper, and back (*i.e.*, left) surfaces of the cubicle within which the wireless network is generated. However, these surfaces and effects are unrelated to the range-restriction of the wireless network proximate to the surface (*e.g.*, the extent of the wireless network from the work surface 604 toward the rightward unbounded space in the figure).

As a third example, within the “bounded region” enclosed by the blocking surfaces, Hightower explicitly teaches away from range-restricting the wireless network proximate to a portion of the blocking surfaces. First, Hightower teaches that the wireless signal should adequately fill the entire space (*e.g.*, Hightower col. 5, lines 59-65 provides: “In addition, the invention provides, within the enclosure, a controlled electromagnetic environment that is customized to minimize communications signal ‘dead spots.’”) Thus, Hightower advocates not range-restricting the wireless network to the proximity of a bounding surface, but rather choosing a shape and size of the wireless network that fill the enclosed space with an adequate signal strength. Moreover, Hightower col. 6, line 58 – col. 3, provides:

> In addition to the aspects provided above, the present invention also provides a system comprising a shield, a filter, and a signal leveling component that selectively customizes the propagation of the electromagnetic signals… For selected enclosed communications systems, the signal leveling component selectively grooms the interior electromagnetic signal environment to maintain a reasonably uniform signal amplitude level throughout the enclosure.

Thus, Hightower teaches that it is advantageous to maintain a uniform signal strength of the wireless network within the enclosure – which is directly contrary to range-restricting the wireless network to the proximity of a surface, thus creating a sharp and distinctly non-uniform signal strength gradient within the enclosed space.

Thus, it is respectfully submitted, as with Novakov, the teachings of Hightower do not teach the range-restriction of a wireless network proximate to at least a portion of a surface. Additionally, the teachings of Hightower do not teach that this range-restriction is achieved through the configuration of the powered element; and, moreover, that the techniques of Hightower may supplement the use of the presently claimed techniques, but cannot substitute for the use of the presently claimed techniques.

7(d). Conclusion

For the reasons set forth herein, Appellant respectfully submits that claims 1-37 and 40-45 are allowable under 35 U.S.C. § 103(a) in view of Novakov and Hightower. Accordingly, Appellant respectfully requests reversal of the 35 U.S.C. § 103(a) rejection in view of the cited references.

Respectfully submitted,

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8. CLAIMS APPENDIX

1. (Rejected) A system configured to create a wireless network near a surface, comprising:

an information receiving logic configured to receive an information signal;

a driven element configured to transmit an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone that is restrictively ranged proximate to at least a portion of the surface; and

a transmission line configured to facilitate transferring a first intermediate signal, from which the outbound information signal is derived, from the information receiving logic to the driven element.

2. (Rejected) The system of claim 1, comprising a shield configured to mold the transmission zone.

3. (Rejected) The system of claim 2, the transmission zone molded to be smaller than a PVLAN environment within which the system is located.

4. (Rejected) The system of claim 2, the shield being frequency non-specific.

5. (Rejected) The system of claim 3, the shield being frequency non-specific.

6. (Rejected) The system of claim 2, the molded transmission zone being substantially spherical.

7. (Rejected) The system of claim 3, the molded zone being substantially spherical.

8. (Rejected) The system of claim 4, the molded transmission zone being substantially spherical.

9. (Rejected) The system of claim 1, the system configured to transmit the outbound information signal to an electronic device substantially positioned within the transmission zone, and the predetermined power of the outbound information signal being substantially less than a power of an outbound signal transmitted from the electronic device.

10. (Rejected) The system of claim 1, at least a portion of the surface comprising one or more of~~,~~ a desktop, a tabletop, a desk, a table, a wall, a ceiling, a floor, a door, a window, a kiosk surface, a work surface, an airplane seat, an airplane seat-back, an airplane tray-table, an automobile interior, medical furniture, a medical enclosure, and a cabinet.

11. (Rejected) The system of claim 2, the molded transmission zone being substantially discontinuous from a space a user's body occupies when operating in an environment within which the molded transmission zone is located.

12. (Rejected) The system of claim 2, the molded transmission zone being less than twenty four inches in a plane and substantially discontinuous from a space a user's body occupies when operating in an environment within which the molded transmission zone is located.

13. (Rejected) The system of claim 4, the molded transmission zone being less than twenty four inches in a plane and substantially discontinuous from a space a user's body occupies when operating in an environment within which the molded transmission zone is located.

14. (Rejected) The system of claim 5, the molded transmission zone being substantially discontinuous from a space a user’s body occupies when operating in an environment within which the zone is located.

15. (Rejected) The system of claim 6, the molded transmission zone being less than twenty four inches in a plane and substantially discontinuous from a space a user’s body occupies when operating in an environment within which the molded transmission zone is located.

16. (Rejected) The system of claim 7, the molded transmission zone being substantially discontinuous from a space a user’s body occupies when operating in an environment within which the zone is located.

17. (Rejected) The system of claim 8, the molded transmission zone being less than twenty four inches in a plane and substantially discontinuous from a space a user’s body occupies when operating in an environment within which the molded transmission zone is located.

18. (Rejected) The system of claim 9, the transmission zone being less than twenty four inches in a plane and substantially discontinuous from a space a user’s body occupies when operating in an environment within which the transmission zone is located.

19. (Rejected) The system of claim 1, comprising a plurality of driven elements configured to create a plurality of transmission zones.

20. (Rejected) The system of claim 19, comprising a plurality of shields configured to mold the plurality of transmission zones.

21. (Rejected) The system of claim 20, the transmission zones molded so as not to substantially overlap one another.

22. (Rejected) The system of claim 8, comprising two or more shields configured to abate at least a portion of the molded transmission zone.

23. (Rejected) The system of claim 17, the shield arranged within a surface and configured to abate at least a portion of the transmission zone so that the transmission zone does not extend below the surface at which a user may be seated within the unabated portion of the zone.

24. (Rejected) The system of claim 2, the molded transmission zone not coextensive with an environment within which the transmission zone is located.

25. (Rejected) The system of claim 2, the molded transmission zone not coextensive with the entirety of an environment within which the transmission zone is located.

26. (Rejected) The system of claim 1, at least one of the information receiving logic, the driven element, and the transmission line integrated into the surface.

27. (Rejected) The system of claim 18, at least one of the information receiving logic, the driven element, and the transmission line integrated into the surface.

28. (Rejected) The system of claim 23, at least one of the information receiving logic, the driven element, and the transmission line integrated into the surface.

29. (Rejected) The system of claim 23, comprising an effective zone indicator located on the surface and configured to visually indicate a boundary associated with the unabated portion of the transmission zone.

30. (Rejected) The system of claim 1, the information receiving logic, the driven element, and the transmission line are all integrated into a single PVLAN-space element.

31. (Rejected) The system of claim 18, comprising:

an effective zone indicator located on the surface and configured to visually indicate a boundary associated with the transmission zone.

32. (Rejected) The system of claim 20, comprising a plurality of effective zone indicators located on the surface~~s~~ and configured to visually indicate respective boundaries of the transmission zones.

33. (Rejected) A method of creating a wireless network near a surface, comprising:

receiving an information signal;

selectively deriving an intermediate signal from the information signal;

selectively relaying the intermediate signal to a driven element;

transmitting an outbound information signal derived from the intermediate signal from the driven element at a predetermined power output and a predetermined frequency that create a transmission zone that is restrictively ranged proximate to at least a portion of the surface; and

positioning one or more shields to perform one or more of~~,~~: molding the size of the limited transmission zone, molding the shape of the limited transmission zone, protecting the limited transmission zone from RF interference, and limiting interference produced by transmitting the outbound information signal.

34. (Rejected) The method of claim 33, the information signal comprising one or more of: a telephone signal, a computer signal, a facsimile signal, an internet signal, a DSL signal, a broadcast signal, a GPS signal, and a radio signal.

35. (Rejected) The method of claim 33, the outbound information signal ~~is~~ transmitted with a power of about 0.01 mW to about 1 mW, and the outbound information signal ~~is~~ transmitted with a power that is less than about 1/48th of the power of the outbound signal transmitted from the electronic device.

36. (Rejected) The method of claim 35, the outbound information signal ~~is~~ transmitted with a frequency of about 500 MHz to about 1.5 GHz.

37. (Rejected) A piece of furniture, comprising:

an information receiving logic configured to receive an information signal;

a driven element configured to transmit an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone that is restrictively ranged proximate to at least a portion of the surface;

a transmission line configured to facilitate transferring a first intermediate signal, from which the outbound information signal is derived, from the information receiving logic to the driven element;

a shield configured to perform one or more of: molding the transmission zone~~,~~ to at least partially block electromagnetic radiation from entering the transmission zone, and to at least partially block the outbound signal from leaving the transmission zone.

38. (Withdrawn) A method of altering a piece of furniture, comprising:

providing a shielding material configured to affect the transmission of electromagnetic radiation; and

integrating the shielding material into the piece of furniture.

39. (Withdrawn) The method of claim 38, comprising:

providing a driven element configured to transmit a PVLAN signal by electromagnetic radiation; and

integrating the driven element into the piece of furniture.

40. (Rejected) The system of claim 1, the driven element configured to transmit the outbound information signal extending outward from at least a portion of the surface.

41. (Rejected) The system of claim 9, the outbound information signal transmitted with a power of about 0.01 mW to about 1 mW, and the outbound information signal transmitted with a power that is less than about 1/48th of the power of the outbound signal transmitted from the electronic device.

42. (Rejected) The system of claim 19, the at least two transmission zones comprising one wireless network.

43. (Rejected) The method of claim 33, transmitting the outbound information signal comprising: transmitting the outbound information signal extending outward from at least a portion of the surface.

44. (Rejected) The piece of furniture of claim 37, the driven element configured to transmit the outbound information signal extending outward from at least a portion of the surface.

45. (Rejected) A system configured to create a wireless network near a surface to an electronic device substantially positioned within the transmission zone, at least a portion of the surface comprising one or more of a desktop, a tabletop, a desk, a table, a wall, a ceiling, a floor, a door, a window, a kiosk surface, a work surface, an airplane seat, an airplane seat-back, an airplane tray-table, an automobile interior, medical furniture, a medical enclosure, and a cabinet, the system comprising:

an information receiving logic integrated with the surface and configured to receive an information signal;

at least one driven element integrated with the surface and configured to transmit an outbound information signal at a predetermined power and a predetermined frequency that create a transmission zone that extending outward from at least a portion of the surface and that is restrictively ranged proximate to at least a portion of the surface, the predetermined power of the outbound information signal transmitted with a power that is less than about 1/48th of the power of the outbound signal transmitted from the electronic device;

a transmission line configured to facilitate transferring a first intermediate signal, from which the outbound information signal is derived, from the information receiving logic to the driven element;

at least one frequency non-specific shield configured to mold the transmission zone into a substantially spherical molded transmission zone that is less than twenty four inches in a plane, that is not coextensive with the environment within which the transmission zone is located, and that is substantially discontinuous from a space a user's body occupies when operating in an environment within which the molded transmission zone is located; and

a plurality of effective zone indicators located on the surface and configured to visually indicate respective boundaries of the molded transmission zone.

9. EVIDENCE APPENDIX

No evidence is relied upon in this Appeal Brief.

10. RELATED CASES APPENDIX

No cases relating to the present matter are known to the Appellant.